

TRAFFIC COMMISSION REPORT

July 22, 2010

Item VH

DISCUSSION OF SIDEWALK BULBOUTS

ISSUE:

Traffic Commission requested a discussion of sidewalk bulb-outs.

BACKGROUND

Burbank is designing and installing sidewalk bulb-outs at schools through several Safe Routes to School (SR2S) grants. The proposed bulb-outs are located at:

- California Street (Bret Harte School)
- Screenland Drive (Luther Burbank School)
- Delaware Road (John Muir School)
- Bethany Road (John Muir School)
- Oak Street (Stevenson School)
- Elmwood Street (McKinley School)

DISCUSSION:

A curb extension is a traffic calming measure, primarily used to extend the sidewalk, reducing the crossing distance and allowing pedestrians about to cross and approaching vehicle drivers to see each other when vehicles parked in a parking lane would otherwise block visibility.

The bulb-out is an angled narrowing of the roadway and a widening of the sidewalk. This is often accompanied by an area of enhanced restrictions (such as a "no stopping" or parking prohibitions and the appropriate visual reinforcement. Curb extensions are often used in combination with other traffic calming measures and are frequently sited to "guard" pedestrian crossings. The primary use of curb extensions is to improve visibility of pedestrians and reduce their exposure to motor vehicles.

Curb extensions are also used in a number of special circumstances:

- To provide additional horizontal space to allow retrofitting of existing sidewalks with ramps, where the sidewalk would otherwise be too narrow.
- To provide additional visibility and protection for pedestrians (particularly children) when leaving school areas. The curb extension may contain a pedestrian barrier, preventing pedestrians from running across the street.
- In combination with a controlled urban parking scheme, where parking is shielded from oncoming traffic by the extended sidewalk element.

TRAFFIC COMMISSION REPORT

July 22, 2010

- To slow and calm traffic, particularly fast traffic turning from a major to a minor road.

Sidewalk bulb-outs in Burbank are intended to improve safety of school age pedestrians arriving and departing school. Studies were conducted of walking students and bulb-out locations were identified based on the number and age of school pedestrians. Further, bulb-outs were designated at locations where they would tend to calm traffic but not deter turning movements or cause unnecessary congestion. The locations noted above are on local streets which carry less than 5,000 daily vehicles and where much of the traffic is school oriented.

The sidewalk bulb-outs incorporate several design features to make them safe for pedestrians, but not restrictive for vehicular travel. They are 6 feet wide (2 feet narrower than the parking lane) to insure they will not overly narrow the travel lane. They are located at locations where turning traffic is minimal or in some cases where we wish to discourage turning traffic. The proposed bulb-outs are also located in well lit locations for nighttime visibility. Attachments 1 and 2 show typical bulb-out designs. These designs will facilitate traffic flow while reducing the crossing width for pedestrians.

Attachment 3, published by the Pedestrian and Bicycle Information Center, discusses attributes of sidewalk bulb-outs. Attachment 4 is a discussion developed by the City of Portland Department of Public Works on sidewalk bulb-outs, and Attachment 5 is a discussion by a local architect with Studio 111. These discussion papers illustrate different perspectives on sidewalk bulb-outs.

CONCLUSIONS

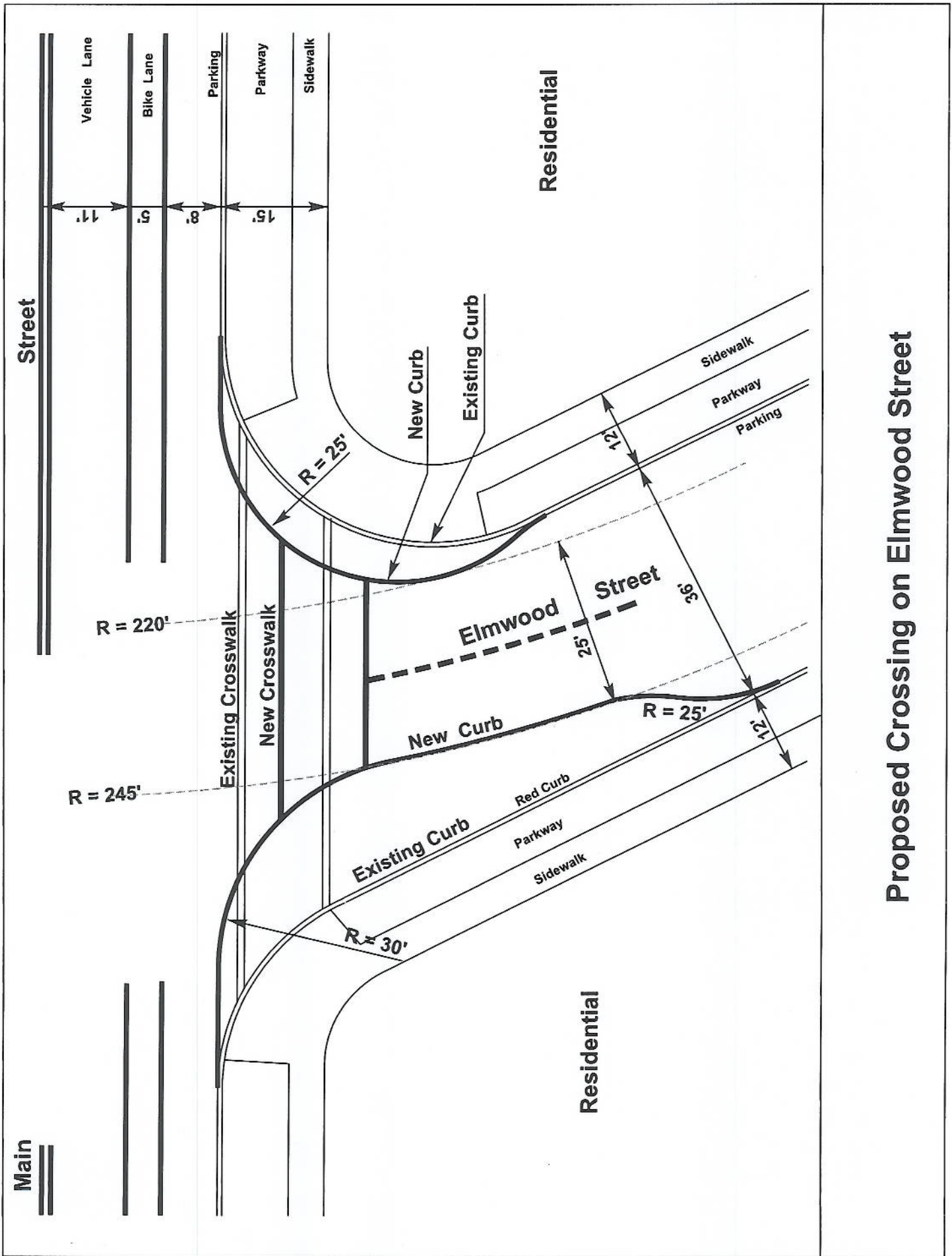
Staff plans to install sidewalk bulb-outs at six locations in Burbank. The locations were carefully selected with considerations for traffic volume, pedestrian activity, parking demand, visibility, and lighting. Staff considered available recognized design criteria in the design of the facilities.

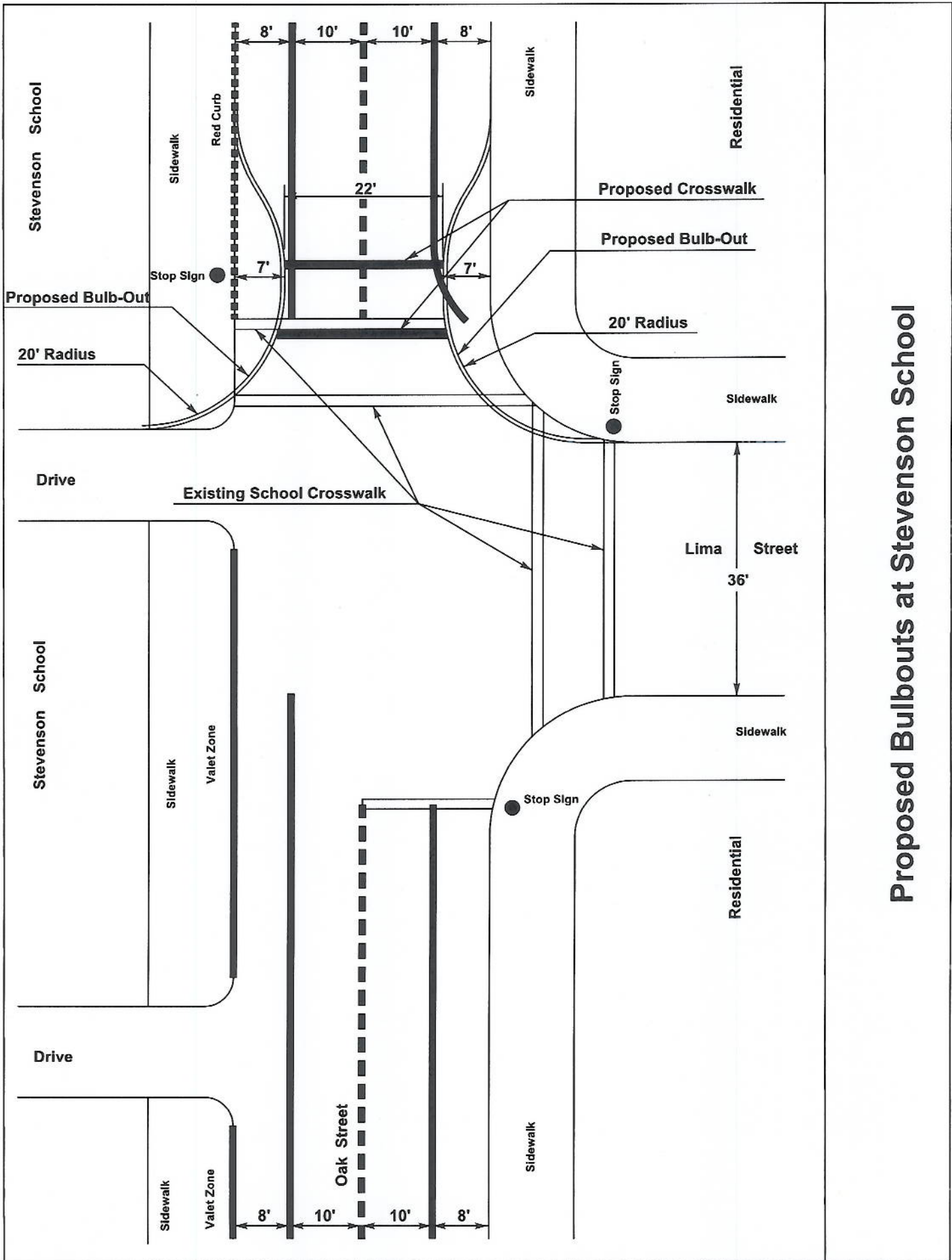
RECOMMENDATIONS:

Receive and File

ATTACHMENTS:

1. McKinley School Bulb out
2. Stevenson School Bulb out
3. Curb Extensions
4. Portland Curb Extensions
5. Pedestrian Amenities





Proposed Bulbouts at Stevenson School

Curb Extensions



Curb extensions—also known as bulb-outs or neckdowns—extend the sidewalk or curb line out into the parking lane, which reduces the effective street width. Curb extensions significantly improve pedestrian crossings by reducing the pedestrian crossing distance, visually and physically narrowing the roadway, improving the ability of pedestrians and motorists to see each other, and reducing the time that pedestrians are in the street.

Curb extensions placed at an intersection essentially prevent motorists from parking in or too close to a crosswalk or from blocking a curb ramp or crosswalk. Motor vehicles parked too close to corners present a threat to pedestrian safety, since they block sightlines, obscure visibility of pedestrians and other vehicles, and make turning particularly difficult for emergency vehicles and trucks. Curb extensions also provide an excellent place to locate stop signs which will be more visible since they cannot be easily blocked by parked cars. Motorists are encouraged to travel more slowly at intersections or midblock locations with curb extensions, as the restricted street width sends a visual cue to motorists. Turning speeds at intersections can be reduced with curb extensions (curb radii should be as tight as is practicable). Curb extensions also provide additional space for curb ramps and for level sidewalks where existing space is limited.

Curb extensions are only appropriate where there is an on-street parking lane. Curb extensions must not extend into travel lanes, bicycle lanes, or shoulders (curb extensions should not extend more than 1.8 m (6 ft) from the curb). The turning needs of larger vehicles, such as school buses, need to be considered in curb extension design.

Purpose

- Improve safety for pedestrians and motorists at intersections.
- Increase visibility and reduce speed of turning vehicles.
- Encourage pedestrians to cross at designated locations.
- Prevent motor vehicles from parking at corners.
- Shorten crossing distance and reduce pedestrian exposure.

Considerations

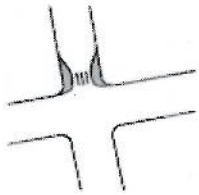
- Curb extensions can provide adequate space on narrow sidewalks for curb ramps and landings.
- Curb extensions should only be used where there is a parking lane, and where transit and bicyclists would be traveling outside the curb edge for the length of the street.
- Midblock extensions provide an opportunity to enhance midblock crossings. Care should be taken to ensure that street furniture and landscaping do not block motorists' views of pedestrians.
- Where intersections are used by significant numbers of trucks or buses, the curb extensions need to be designed to accommodate them. However, it is important to take into consideration that those vehicles should not be going at high speeds, and most can make a tight turn at slow speeds. In some situations, curb bulbs can actually make it easier for trucks to turn by bringing them out, away from the curb, thereby giving them a better angle to enter the receiving lane.
- It is not necessary for a roadway to be designed so that a vehicle can turn from a curb lane to a curb lane. Vehicles can often encroach into adjacent lanes safely where volumes are low and/or speeds are slow. Speeds should be slower in a pedestrian environment.
- Emergency access is often improved through the use of curb extensions if intersections are kept clear of parked cars. Fire engines and other emergency vehicles can climb a curb where they would not be able to move a parked car. At midblock locations, curb extensions can keep fire hydrants clear of parked cars and make them more accessible.
- Curb extensions can create additional space for curb ramps, landscaping, and street furniture that are sensitive to motorist and pedestrian sightlines; this is especially beneficial where sidewalks are otherwise too narrow.
- Ensure that curb extension design facilitates adequate drainage.

Estimated cost

Curb extensions cost from \$5,000 to \$25,000 per corner, depending on design and site conditions. Drainage is usually the most significant determinant of cost. If the curb extension area is large and special pavement and street furnishings and planting are included, costs would also be higher. Costs can go up significantly if something major, such as a utility pole or controller box, is moved.

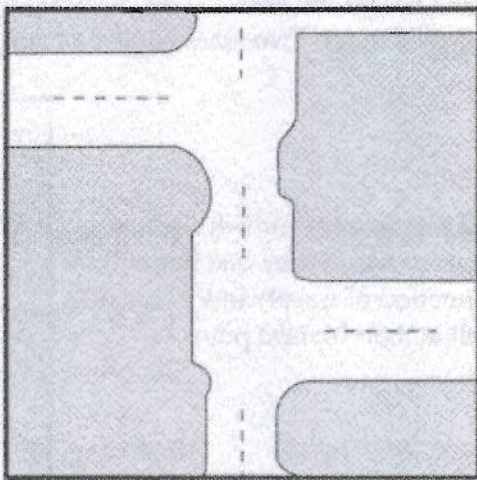
Source: Pedestrian and Bicycle Information Center, walkinginfo.org

Curb Extensions – Portland Oregon



Description:

Curb extensions narrow the street by widening the sidewalk or the landscaped parking strip.



Purpose:

These devices are employed to make pedestrian crossings easier and to narrow the roadway.

Effectiveness:

Curb extensions effectively improve pedestrian safety by reducing the street crossing distance and improving sight distance. They may also slightly influence driver behavior by changing the appearance of the street. They can be installed either at intersections or midblock.

Advantages	Disadvantages
Reduce pedestrian crossing distance and time	Require some parking removal
Make pedestrian crossing points more visible to drivers	May make it difficult to accommodate full bicycle lanes
Prevent vehicles from passing other vehicles that are turning	
May visually enhance the street through landscaping	
Do not slow fire vehicles	

Cost:

Curb extensions costs \$7,000-10,000.

Parking Impacts:

Curb extensions may occupy street area otherwise available for curbside parking.

Transit Service Impacts:

Curb extensions do not adversely affect transit service. Curb extensions at transit stops enhance service by moving the curb so riders step directly between the sidewalk and bus door.

Emergency Services Impacts:

None.

Noise Impacts:

None.

Other Considerations:

Where the crowns of the street are steep, curb extensions may actually go "uphill" because the new curb is higher than the original curb. If poorly designed, this can result in puddles on the sidewalk.

Source: City of Portland, Oregon, Department of Transportation

Making Streets Slim Down Is Good For Pedestrians, Businesses And Even Traffic

Author:

• Michael Bohn

Cities are greatly in need of slimming down their roads, says architect Michael Bohn. A recent project in Long Beach, California shows how curb extensions and street furniture can have a huge impact on the economics of downtowns.

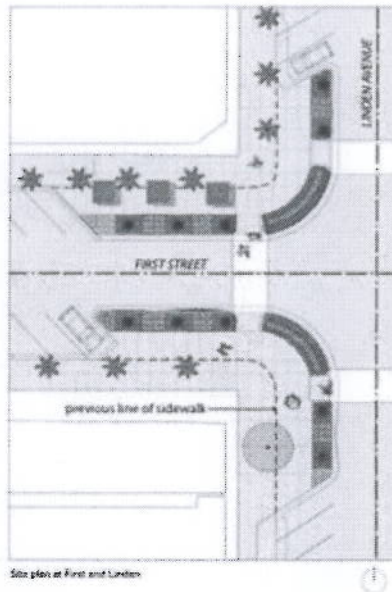
Humans are not the only ones needing a diet these days. More and more cities are putting their streets on a diet – reducing vehicle lanes to add pedestrian space and calm traffic. New York City's recent success in closing an entire section of Times Square to traffic is the most famous example. But the real news is how quickly and effectively it can happen even on a fairly small scale in any city or town.

The other news is that, besides the benefits road diets give to pedestrians and business that thrive on foot traffic, in some cases even traffic congestion is – surprise – improved as well.



Long Beach, California is implementing a series of road diets that prove just how well they can work. Among these is a project unveiled in late 2009 at First Street and Linden Avenue in the East Village Arts District. Studio One Eleven, my firm, worked with the city to design curb extensions at this intersection. These "bulb-out" extensions of the sidewalk reduce the curb-to-curb distance – originally over 50 feet – between 40 and 60 percent, significantly lowering the exposure pedestrians face with vehicles, bringing them out past the obstructions of parked cars, street trees and street furniture. The narrower right of way on First Street has also calmed traffic, adding to pedestrian and bicycle safety and giving businesses better visibility.

Today, these bulb-outs are fully integrated into the street infrastructure, but a prototype plan was able to test the idea temporarily, turning the experiment into a community event. The city placed large, potted plants in the street to define the pedestrian zone. An adjacent restaurant expanded its outdoor seating into this new area of the "sidewalk" (at this point it was actually still part of the street). And an information kiosk was installed to explain the concept of the curb extensions.



It is taken for granted among some planners that enhancing pedestrian mobility can also enhance business activity, but the results in this case were dramatic: The restaurant achieved the highest receipt sales in its 10-year history.

The new, permanent curb extensions at First Street and Linden Avenue expand the pedestrian realm over 3,000 square feet, the size of two average coffee shops or a medium-sized restaurant. Besides outdoor dining, there is now room for landscaping (using drought-tolerant plants), street furniture such as benches, sidewalk paving patterns, and trash receptacles. Businesses use the expanded sidewalk for additional bike racks and outdoor sales displays. The extra space has cleared existing sidewalk area for thorough movement while expanding and making prominent the outdoor activity at these businesses.

This human-scaled design is perhaps the most important advantage of a well-planned road diet: The First and Linden curb extensions have contributed to the increased vitality of Long Beach's East Village Arts District, with business owners, customers and local residents enjoying a sense of place that harmonizes with the energetic vibe of retail and community destinations. More than ever, the neighborhood is a civilized place where pedestrians and bicyclists are easy to spot, coffee drinkers can people watch, and shoppers are inclined to linger.

But what about the ability of curb extensions to actually facilitate traffic flow? It seems counter-intuitive, as bulb-outs purposefully slow down cars and often eliminate right-turn lanes. Those who advocate traffic diets believe it is more important for pedestrians to cross safely than for cars to get through an intersection. However, the shorter distance that results from curb extensions on each side of a street means the average pedestrian spends at least four seconds less time

when crossing the street (based on the Manual on Uniform Traffic Control Devices average walking speed of 4 feet per second). The irony is that the reduced time necessary for walkers to cross the street can provide more time for cars to pass, partially compensating for the loss of a right-turn lane. In other words, everybody wins: Cars get maintained traffic flow and pedestrians get safer crossings.

Other road diet plans also carry this double benefit. For example, car lanes can be reduced without necessarily reducing the number of cars they move. To maximize traffic capacity, engineers typically fit as many automobile lanes as possible, leaving a relatively narrow border on each side for sidewalks and (in some cases) on-street parking. This sometimes results in an even number of lanes, eliminating a dedicated left-turn lane. This means there must be restrictions placed on left-turn movement, as the left-most lane must do double duty as a left-turn lane and a throughway lane. Because the shared lane is obstructed whenever a left-turning car is waiting for an opening to cross traffic, left turns are often limited to non-peak hours.

When a road diet is applied to a road with at least four lanes overall, it often removes one lane in each direction. The space made available by eliminating these two lanes can be used for creating a dedicated left-turn lane, as well as sidewalks, parkways, bike lanes, or a dedicated right-turn lane. Surprisingly, eliminating one through-lane in each direction does not result in a proportional loss of car-carrying capacity, and the addition of a dedicated left-turn lane (and sometimes a dedicated right-turn lane as well) helps reduce congestion. Adding turn lanes in this manner can also decrease accidents, because it results in fewer lane changes and better visibility for on-coming traffic. All of these benefits are useful in explaining road diets to skeptical traffic engineers, or reluctant business or community members.

My firm is working with Long Beach to add curb extensions and other road diets throughout the city. These include narrowing streets adding curbside parking and bike lanes, and creating protected bike roadways between car parking and the sidewalk.

The addition of curbside parking is important particularly in parking-impacted areas. At a cost of \$8-12k per stall when a new surface parking lot is built, curbside parking is almost a freebie. For example, another Long Beach road-diet project (on Livingston Drive) will add 32 parking stalls in a mid-density residential neighborhood, with the only cost for these stalls being paint to restripe the street. From a retail perspective having curbside parking in front of a shop can increase retail sales by thousands of dollars while at the same time serve as a buffer to pedestrians using the sidewalk from moving vehicles.

Many of these changes are the result of Long Beach's Livable Community agenda, which enjoys broad support from Long Beach's City Council and is a top priority for its city manager. In 2009 the city hired Mobility Coordinator Charlie Gandy – a nationally prominent bicycling proponent – to implement many of these plans.

According to **Streetsblog Los Angeles**, which closely follows pedestrian, public transit, bicycle and related issues, the city is concerned about the health of its residents, and for the environment. "But this is also an economic-development strategy," says writer Joe Linton. "If Long Beach is to attract and retain companies and workers, then it needs to be able to compete. The city has decided that livability will make it competitive."

In the instance of the First Street and Linden Avenue curb-extensions and the other road diets underway, that strategy is successful.

Source: Planetizen.com, Michael Bohm, Studio 111, Long Beach